regularly. These reversing machines also permit the operator to reverse the furnace at any time he sees fit. Machines of this type have been installed at a number of by-product coke-oven plants, but there seems to be a tendency upon the part of the " heaters " to cut out the automatic timing device. It is hardly necessary to state that a certain amount of passive or impassive opposition might be expected to the use of a machine of this kind, a species of sabotage which is extremely difficult to overcome. Under ordinary working conditions there should be two to eight reversals per hour, and it is necessary to proportion the checkerwork to suit the longest time period.

TABLE 7

MAXIMUM AND MINIMUM VOLUME OF CHECKER BRICK ASCERTAINED PROM PRACTICE

Capa c- ity Tons	Gas		Air		Air+Gas	
	Minimu	Maxiniu	Minimu	Maximu	Minimu	Maximu
10	29.7		39.1		68.8	
15	33.6		41.0		74.6	
20	21.0	25.8	23.6	39.0	44.6	64.8
25	27.6	29.3	32.7	40.8	60.3	70.1
30	17.7	23.4	23.6	31.2	41.3	54.6
35	18.7	19.0	24.6	25.9	43.3	44.9
40	18.4	21.0	23.6	24.3	42.7	44.6
50	17.9	66.0	31.4	66.0	50.4	132.0
60	21.0	46.3	23.6	94.4	44.6	128.2
75	33.5	44.5	44.5	70.2	78.0	114.7
80	21.0		24.8		45.8	
100	21.0		23.6	------	44.6	

The time factor has a definite bearing on the thickness of the checker brick. This is shown by the curves of Fig. 153. These

curves were plotted for a fire-clay brick. For a silica brick or brick of other material the co-ordinates would be different, but the curves would be similar to those shown. These curves show the rise in temperature at the center line of a brick in per cent of the rise in temperature at the surface, when both faces of the brick are heated during various time intervals. In these curves